DOCUMENT RESUME

ED 308 789 HE 022 758

AUTHOR Liebmann, Jeffrey D.
TITLE The Future Institutional Research Office: Brave New Workplace or Electronic Sweatshop? AIR 1989 Annual Forum Paper.
PUB DATE May 89
NOTE 23p.; Paper presented at the Annual Forum of the Association for Institutional Research (29th, Baltimore, MD, April 30-May 3, 1989).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Administration; Computers; *Futures (of Society); Higher Education; Information Technology; *Institutional Research; Labor Market; *Office Automation; Organizational Change; *Organizational Theories; Technological Advancement; *Work Environment
IDENTIFIERS *AIR Forum

ABSTRACT

Information technology is changing the workplace. Forecasts range from wondrous visions of future capabilities to dark scenarios of employment loss and dehumanization. Some predict revolutionary impacts, while others conclude that the way we do business will change only gradually if much at all. The less positive visions of the future workplace are reviewed here, in the context of the ways in which changes in the academic workplace mirror those of business, with a 5- to 10-year lag. It is felt that institutional research offices could suffer, based on recent works on the negative aspects of office automation. The following topics are discussed in particular: (1) downsizing; (2) use of part-time and "gold collar" workers--both part-time low-skill workers and experts who work as independent contractors; (3) redistribution of jobs; (4) reduced quality of work life; (5) increased monitoring of employee effort; (6) health-related problems and stress; and (7) the future institutional research office. Contains 17 references. (Author/KM)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED308789

THE FUTURE INSTITUTIONAL RESEARCH OFFICE: BRAVE NEW WORKPLACE OR ELECTRONIC SWEATSHOP?

Jeffrey D. Liebmann

Planning and Policy Analyst

University of Pittsburgh

1917 Cathedral of Learning

Pittsburgh, PA 15260

(412) 624-6599

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

✓ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

AIR

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

HE 022 758

BEST COPY AVAILABLE

for Management Research, Policy Analysis, and Planning

This paper was presented at the Twenty-Ninth Annual Forum of the Association for Institutional Research held at the Omni Inner Harbor Hotel and the Lord Baltimore Hotel, Baltimore, Maryland, April 30 - May 3, 1989. This paper was reviewed by the AIR Forum Publications Committee and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC Collection of Forum Papers.

Teresa Karolewski
Chair and Editor
Forum Publications Editorial
Advisory Committee

Abstract

We read daily how information technology is changing the workplace. Forecasts range from wondrous visions of future capabilities to dark scenarios of employment loss and dehumanization. Some predict revolutionary impacts, while others conclude that the way we do business will only change gradually if much at all. This paper reviews the less positive visions of the future workplace. This is done in the context of how changes in the academic workplace mirror those of business with a 5-10 year lag. Institutional research offices could suffer based on recent works on the negative aspects of office automation. In particular, the paper emphasizes how these futures could change institutional researchers as professionals.

THE FUTURE INSTITUTIONAL RESEARCH OFFICE: BRAVE NEW WORKPLACE OR ELECTRONIC SWEATSHOP?

Introduction

Institutional researchers manage the production of information in colleges and universities. But, recent changes in office technology have drastically altered both the information we create and the techniques we use. We often must assimilate these changes into our organizations in a timely and effective manner.

Keeping abreast with the latest advances in office automation is difficult enough. We have little time to consider the qualitative aspects of rapidly changing technology. New technologies affect not only our machines but the way we and our superiors think and work. Therefore, we face the persistent threat of becoming engulfed in a wave of change.

As agents of change on campus, institutional researchers must look towards the future and plan for changing office technology. This paper reviews the less optimistic office automation literature and warns about potential threats to the way we do business. Its purpose is to make institutional researchers look beyond tools and machines to our future as professionals in the coming century.

First, we will review the changes in the 20th century workplace. We will discuss management theory and how changes in higher education management reflect those in business. We will see that computer technology is the latest tool to increase managerial control of the workplace. Recent literature citing the problems associated with office automation and potential problems in the future are summarized. Lastly, we will discuss how these trends could affect institutional research and our role as professional employees.

The Workplace in the 20th Century

The workplace in America and abroad changed drastically in this century. Industrial activity spread from Europe and North America around the globe, surpassing agricultural labor. With these economic changes came social and political change and a completely new way of thinking about our work lives. Today, independent skilled craftsmen or those operating apart from the business environment like farmers are unique. Workers two generations ago found that one job or skill lasted a lifetime. We find that today we must continually change jobs and learn new fields.

While industrialism grew, so did the "science of management." Its foremost proponent, Frederick Taylor, sought to improve factory output by standardizing routine or repetitive tasks. Using time and motion studies, Taylor subordinated the employee to a system of production. The system replaced decision-making ability and work style with rigid techniques. This new system increased productivity, turning former luxury items into mass market products. The only cost scientific management introduced was a degree of inflexibility into the production process.

As the century unfolded, industrial labor gave way to "information work." Higher education is a prime example of the growth in this segment of the economy. One hundred years ago, the largest universities employed a handful of non-academic staff. These were mostly technicians and few were equivalent to our concept of professional staff. Today, staff outnumber faculty in American colleges and universities. Information work is now the single largest employment category in industrial economies. This bureaucratization process occurred in most business areas and led to new management theories.

For instance, information workers have higher education levels than production workers. Managers found that scientific management techniques often failed with white-collar workers. McGregor (1960) introduced the concept of Theory X (need to control workers) versus Theory Y management (integrate organizational goals with workers' goals). Recently, American managers brought back Japanese participatory management recognizing the need to address the human in each worker.

During this period of the humanizing of management theory, computers grew in accessibility and usage. Through the 1960's and 1970's, the computer evolved from giant mainframe to small micro on every desktop. The evolution of the computer brought with it the promise of new and better jobs. Office automation became the answer to white collar drudgery. In short, the computer would give business back the flexibility that the rigid systems of scientific management removed.

Viewing office automation as a tool to better the standard of work life had one more effect. Computers not only required systems personnel, but analysts to make use of their huge output. This demand coupled with the explosion of higher education in the 1960's fueled the growth in our profession. It is only natural that college presidents saw the computer in many positive ways since computers:

1. relieve employees of tedious tasks;
2. allow managers more flexibility; and
3. provide data not previously available, creating the need for a new class of bureaucrat to provide management with analyses of these data.

The Unique Aspects of the Office Workplace

Unlike farm or factory, the office is a complex organism. How an office functions relates more to its managerial context than what occurs on the assembly line. Strassmann (1985) discusses recent changes in information work as a shift in the classic model of information work. Traditionally, management could concentrate it efforts solely on their own production of output to customers. Information management was simply the coordination effort of a small management team and selected specialists and experts.

In the 1970's, however, this view of the office workplace changed. Widespread computer use and a number of external factors (governmental intervention, global competition) created organizations of more complexity. The flexibility office automation and increasing bureaucratization led to the hiring of even more specialists and staff support. These new employees were closely tied to management and their primary task was the production of information, not outputs to customers. Higher education certainly mirrored this growth in non-academic staff (Liebmann, 1986). According to Strassmann (1985, p.26),

> In the absence of a management theory for dealing with nonstandard and increasingly uncertain market conditions, additional manpower and computers were thrown at the problem in the hope that somehow the interaction of competing staff groups would be adequate to deal with the tasks at hand.

Therefore, the role of managers in the workplace quickly changed from controlling production to managing the flow of information for internal use.

Institutional researchers can recognize these changes in colleges and universities. Early members of the profession were often academics and

administrators reporting directly to the President/Chancellor or Provost. Tasks included a wide range of true research which directly impacted our "output" (higher education) to our "customers" (students). In recent years, however, institutional research assumed responsibility for large amounts of internal information generation and governmental compliance reporting. It is not unusual for the institutional research office today to report to administrative or budget vice presidents. Institutional research today may impact the academic product very little at many colleges and universities.

In summary, organizations underwent radical growth in the past century. Management theory adapted to that growth by instituting systems of control over the workforce. These controls reduced organizational flexibility, but greatly increased productivity. With the advent of computer technology, business saw the opportunity to reclaim lost flexibility, while still maintaining control and organizational growth. The white collar group of workers grew quickly producing a new style of bureaucratic workplace. This and a shift in management theory towards recognizing the human side of workers further reduced managerial control. The higher education workplace reflected that of business throughout this time with a lag of about 5-10 years (See Figure 1).

The Dark Side of Office Automation

We have now reached the present situation. Management, once focussed outward towards consumers, now looks inward more than ever. What it sees is ever-expanding bureaucracies filled with an increasing number of information workers. Armed with office technology and higher levels of education, these workers can produce any information management desires. Yet, these employees act

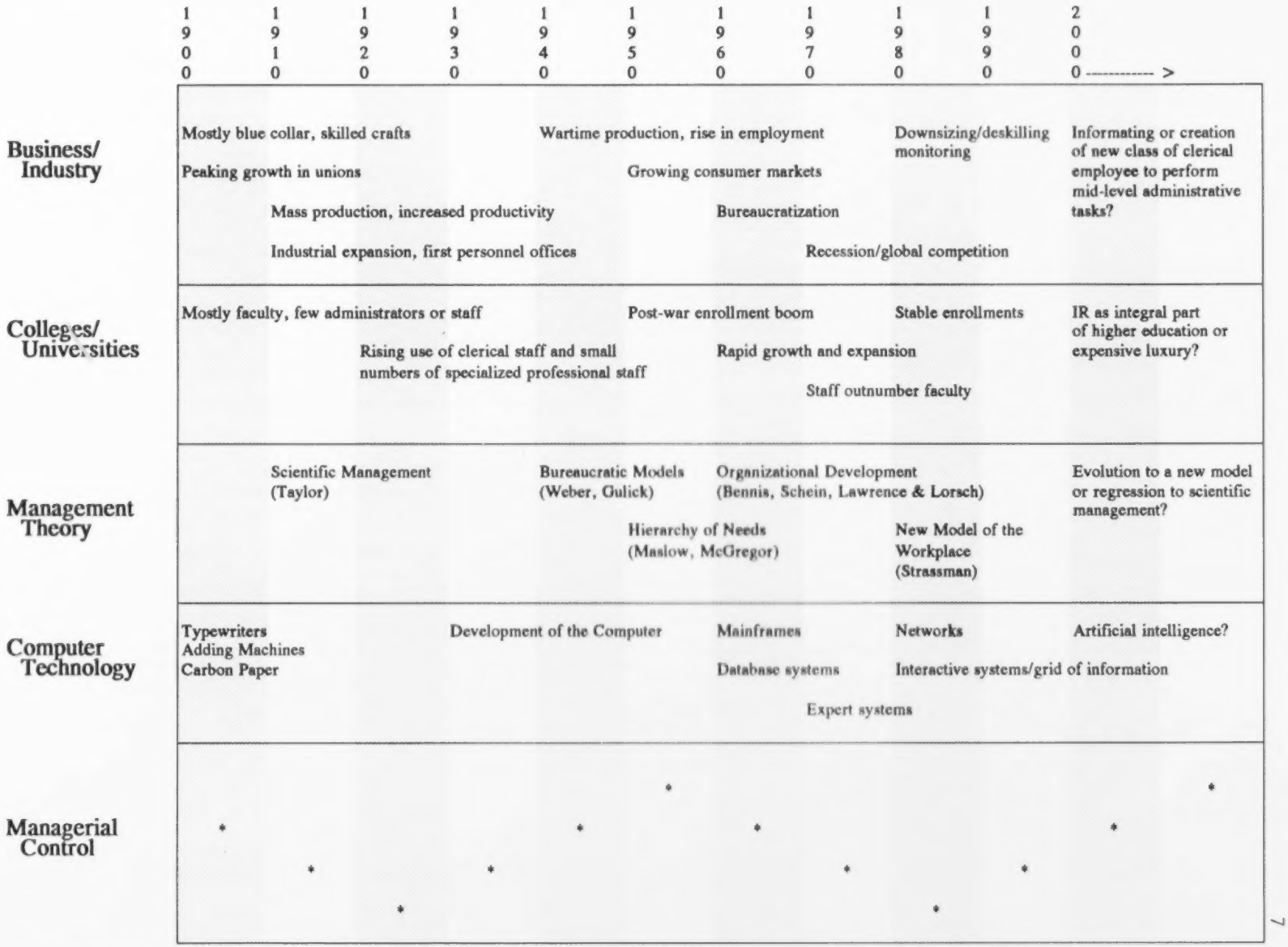

Figure 1. Model of the American workplace in the 20th century – impacts of event and management theory on level of managerial control

Future IR Office

with the same freedom that Frederick Taylor saw as a drawback to factory productivity. As America sees its global economic position sliding, American management feels the need to once again tighten its control over organizations. Office automation has become management's tool in the effort to increase office productivity.

In the past decade, a number of books appeared detailing examples of the unexplored dark side of this shift in management emphasis. Writers are citing evidence that computers are being used not to improve productivity, but to regain control of organizations. Scientific management used time and motion studies to subordinate workers to systems of control. Today's managers are using office automation to subordinate the information worker. What trends caused this negative literature to appear?

Downsizing

Most American businesses today are reorganizing. This downsizing is an across-the-board effort to reduce the number of employees, especially in the middle ranks (Rochell, 1987). It has the obvious effect of forcing employees to change jobs, even careers. Less understood is that many displaced people fail to find equivalent replacement jobs. Rochell cites governmental reports and independent studies on the decreasing need for workers in the future as a result of computing technology. As more of America's youth receive degrees, we may see a glut of professionally educated workers for a dwindling pool of jobs. The chance that our graduates will be underemployed in the future could grow.

How is it that American businesses can downsize their bureaucracies? With each improvement in computer technology, more of what we do can be

standardized. As Howard states in Brave New Workplace (1985, p. 28), "Standardized work is controllable work." He foresees a time when engineers will sit at a terminal and enter basic computer information. The computer will then design, draft and plan all the necessary data to produce a final product. If decisions for a task can be quantified, then we can produce a program to accomplish it.

Garson (1988) reviews the impacts on social workers, stock brokers and managers in general of computing technology. She finds office technology being used to deskill professional jobs to almost a clerk-level status. Employees not terminated by the system are subordinated to it. Organizations lower job classifications since tasks no longer require the same initial skill levels. In this way, a company reduces both the number of jobs and the amount of professional-level skills needed.

Use of Part-Time and "Gold Collar" Workers

Higher education analysts often read concerns on part-time faculty use. Part-time, temporary or other flexible employment is prevalent and growing. The U.S. Department of Labor (1988) states that contingent work affects a wide range of industries across all occupational levels. It includes not just students and supplemental earners, but men and women who often are primary earners.

The growth in "contingent labor" relates heavily to the growth in the employment of women. As such, it can be both a positive and negative force. While allowing women multiple life roles, contingency work may funnel them into low-paying jobs with little future for advancement. Contingent labor also facilitates computer use. Employees in service jobs have twice the turnover rate of those in manufacturing. Therefore, employers seek standardization of information tasks to

reduce the impact of turnover. As stated before, office automation is the modern answer to standardization of work tasks.

The marriage of computers and the contingent workforce produced widespread use of "back-office" operations in the 1960's and 1970's. These "electronic sweatshops" group many terminal operators into tight quarters performing low-level data-entry work. The spread of personal computers in the 1970's further encouraged contingency work by allowing employees to work at home. Today, networking may provide even further impetus for employees to work part-time as the need for proximity in an office decreases.

New office technology such as networks also allow businesses to farm out work to independent contractors. The benefit to using independent workers is reduced salary and benefits cost. Especially employers in rural areas can use them and reduce reliance on high cost professional employees. Kelley (1985) describes the gold collar worker as a new breed of entrepreneur whose primary skills are their brain power. These workers offer managers professional level skills at little risk.

Redistribution of Jobs

The result of downsizing, deskilling and the increased use of contingency labor is a redistribution of office work. Kuttner (1983) described a future with most employees at the bottom of the workforce, fewer in the middle and few more rising to the top. This distribution occurs when automated equipment replaces manufacturing jobs. Also, junior management and supervisory jobs are automated or deskilled to senior clerical positions. Many remaining middle-level jobs become part-time or are performed by consultants. A small class of "exception worker" handles the few tasks that senior management cannot. These exception workers will

be all that remains of the traditional upwardly-mobile middle management.

This reduction of middle-level jobs then ties rationally with the model of managerial control. Rochell (1987, p. 26) points this out as follows:

> Industrialism and postindustrialism do not only take different approaches. They have different goals. In the workplace, a postindustrial society uses high technology and sophisticated communications to replace, not to assist, human labor. In society, it seeks to impose order. Methods developed for science and technology are transferred to other sectors because a postindustrial society, in order to function as technologists theorize, requires central planning and absolute control.

Reduced Quality of Work life

There are other trends affecting to quality of work life in the future. Frequently, office technology organizes work so that employees work with or for the computer rather than direct the computer. As management regains control over the workplace, workers lose that control. With the loss of control of their work, employees lose their understanding of the work as well. Critics of office automation cite people who no longer learn the "why" of their jobs. The result is that workers find themselves less involved and more dissatisfied with their inability to provide input.

The Steelcase Office Environment Index (1988, p. 4) confirms this notion with the following findings:

> · Although it's decreasing, a large gap still remains between office worker desire for "freedom to decide how they do their own work" and executives' perception of its importance. Seventy-seven percent of workers say this is

"very important," while only 37% of top executives rate it so for their employees.

· Eighty-five percent of office workers feel it is "very important" to be "proud of the quality of products and services," while only 71% of top managers and 67% of facilities managers perceive this to be "very important" to workers.

· Most lacking, according to office worker perceptions, is a "free exchange of information among employees and departments." Seventy-six percent of workers report this as "very important" while only 35% report is as "very true."

· Another significant gap exists between employees who view a "participatory management style" as "very important" (61%) and those who find it to be "very true" in their organization (28%).

Howard's stresses that the idea that new technology will lead to more satisfying work is a key element to the brave new workplace. He cites the IBM ads with a Charlie Chaplin lookalike as a promise to relieve a critic (Chaplin's film Modern Times) from his work prison. In the ads, Chaplin finds happiness and advancement by using the computer. But Howard points out that the idea of the brave new workplace merely disguises ones problems and creates new ones.

The U.S. Department of Labor (1985) recognized some of these problems in Women and Office Automation: Issues for the Decade Ahead. While addressing clerical employment, many of the issues cited have more far-reaching implications. Implementating office automation and reorganizing in an insensitive manner often frustrates workers. Office automation may lead to the carryover of gender-based inequities from the traditional office. And "back office" operations are often poorly designed data processing areas with few personal amenities.

Monitoring

Computer monitoring of employee effort is receiving much attention in recent books. In Theory X management style, businesses today are using terminals as tools to monitor the activities of employees. The output of monitoring comes as productivity ratios which managers can use to evaluate employee's performance.

While there are certainly benefits to assessing office productivity, the negative effects of monitoring on quality of work life are obvious. Bjorn-Andersen and Kjaergaard (1987, pp. 245-6) summarize these effects as follows:

> Adults are humiliated and diminished by being watched and controlled at a very detailed level...Workers with intelligence and energy resist control and sometimes sabotage production. If possible, they seek other kinds of work. The remaining workforce becomes indifferent and careless.

The U.S. Department of Labor (1985) report finds monitoring stressful and anxiety-producing, especially when done without notice to the employee. Monitoring may result in various physical and mental health problems.

Health-Related Problems/Stress

Ergonomics is a word that came into popular usage associated with the use of video-display terminals (VDTs). Factors relating to the environment of the workplace are a growing concern due to the rise in health-related problems. While experts dispute radiation dangers from terminal screens, there is little doubt that other problems reported by workers are real. Vision problems; back, neck and wrist pain; reproductive difficulties; and mental stress are commonly associated with the office environment.

A national survey of secretaries revealed that 73% experienced an increase in

eyestrain related to the use of VDTs (U.S. Department of Labor, 1985). The sedentary nature of computer work led the National Institute for Occupational Safety and Health to recommend rest breaks and body exercises for VDT users. Users of VDTs are now more likely to suffer stress-related problems than managers. Monitoring and poor job design highten stress symptoms, including nausea, insomnia, fatigue, digestive problems, headaches and even coronary disease. While the danger to pregnant women is unclear, some researchers feel that long-term exposure to VDTs causes biological changes, if not damage.

In summary, large scale organizational change is causing underemployment and deskilling. Increased use of contingent workers allows managers to further reduce their reliance on full-time staffing. At the same time, the quality of office work life is falling. Workers today suffer alienation and dissatisfaction, stress associated with poor technology implementation and monitoring and health-related problems.

How do these trends affect institutional research? As middle-level professionals and managers, we are a group facing these threats in the next 10-20 years if not sooner. On the positive side, one can argue that our information gathering is too informal to be deskilled. On the negative side, expert system and artificial intelligence development may lead to breakthroughs that could make even our function replaceable. And calls for analyses of productivity could produce the same quality of life issues facing business employees. The spreading use of VDTs expose us to the same health and stress problems as any other user.

The Future Institutional Research Office

Future visions of office automation range from grand to grim. Many trends will probably continue--use of part-time workers and consultants, downsizing and

deskilling. If our model of managerial control is accurate, then lower quality of work life, health and stress problems will also continue for the near future.

In The Electronic Sweatshop, Garson (1988, p. 159) discusses how managers and the general public change their attitudes towards work and its products. She discusses expert systems that replace professionals with clerks in the following way:

> No, PathFinder-plus-clerk doesn't equal broker; PSYCHSCAN-plus-clerk doesn't equal counselor. As a matter of fact, assembly-line-plus-assembler never really equalled tailor or carpenter. But it equalled clothing and furniture that was good enough. Just as most of us buy assembled automobiles, most of us will wind up taking off-the-shelf advice.

Her point is that eventually consumers accept the product business gives them as long as it satisfies price and other considerations.

Since we do not produce the consumer product, this point is not particularly important for institutional researchers until we consider the corollary. But, since management is our consumer, can they not also become satisfied with a lesser product if it satisfies their needs. That is, while the institutional research function cannot be replaced totally, there may be an acceptable automated substitute in the near future. Some suggest that integrated computer networks are not a technology but a control device. Management may find that networks combined with certain expert systems provide adequate analytical capability to perform institutional research. Even Strassmann, a relative optimist, believes that the expansion of bureaucracy was caused by faulty organizational design and not an inherent need for staffing.

Institutional researchers must remember that our profession is relatively new and typical of jobs created in the past 30 years. Experts and specialists have been the fastest growing group of information workers. It is precisely management's needs

relative to information that will determine the future of institutional research. Therefore, those trends affecting the general business environment, rather than the academic environment, will likely have similar impact on our offices.

Does this mean that institutional research will disappear in the next decade or two? Probably not. More likely to occur is a shift in management theory and a continuation of the managerial control cycle back downward. One proponent of such a view is Zuboff (1988). In her new book, Zuboff suggests that outmoded assumptions about workers' skills and management authority hold back the potential gains of expert systems and reinforce their worst aspects. She agrees that many managers have used the computer as a control tool. She stresses, however, that the importance of office automation is in its ability to "informate."

Zuboff considers learning to be the new form of labor. The future, therefore, holds the hope of managers developing workers' intellectual capabilities through "reskilling" rather than deskilling. This requires managers to break away from old management styles to one where the information is widely available to a workforce that is equitably distributed. The elimination of the two-class structure of work (workers and managers) is critical to increasing productivity for two reasons. First, management would spend less time coordinating and controlling information. Second, we lose the power of expert systems unless we give it to users who understand its workings. Doing so makes them better motivated and more satisfied workers.

Conclusion

Given the history of change in the workplace this century and current business trends, institutional researchers should think about their position in the coming years. Outside pressures, such as governmental regulations or the public concern

over tuition rates, could lead colleges to adapt managerial control techniques. On the other hand, higher education may find its way to an informating society, where professionals use computer power fully to improve institutions.

Institutional researchers need to assess their position within the academic organization carefully. Ours is a new profession with little history and could easily find itself a target of retrenchment. While improving technology may lead us to more and better information, it may also replace us. As professionals with some power to affect change, we must understand these issues. We must help direct administrators towards informated organizations and away from brave new workplaces.

References

Bjorn-Andersen, N. and Kjaergaard, D. (1987). "Choices En Route to the Office of Tomorrow." Chapter 13 of Technology and the Transformation of White-Collar Work. Hillsdale, NJ: Lawrence Erlbaum Associates.

Briefs, U.; Kjaer, J.; and Rigal, J., Eds. (1985). Computerization and Work: A Reader on Social Aspects of Computerization. Berlin: Springer-Verlag.

Garson, B. (1988).The Electronic Sweatshop: How Computers Are Transforming the Office of the Future into the Factory of the Past. New York, NY: Simon and Schuster.

Henderson, B. and Mowery, D., Eds. (1988). The Future of Technology and Work: Research and Policy Issues. Washington, D.C.: National Academic Press.

Howard, R. (1985). Brave New Workplace. New York, NY: Viking, Inc.

Liebmann, J. (1986). "Non-Academic Employees in Higher Education: A Historical Overview." Paper delivered at AIR 1986 Annual Forum, Orlando, FL.

McGregor, D. (1960). The Human Side of the Enterprise. New York, NY: McGraw-Hill Book Company.

National Research Council. (1986). Computer Chips and Paper Clips: Technology and Women's Employment. Washington, D.C.: National Academy Press.

O'Leary, M. (1987). "Is Office Automation Making Automatons of Skilled Workers?" PC Week 4, June 16, p. 45.

Rochell, C. and Spellman, C. (1987). Dreams Betrayed: Working in the Technological Age. Lexington, MA: D.C. Heath and Company.

Sherman, B. (1985). The New Revolution: The Impact of Computers on Society. New York, NY: John Wiley and Sons.

Steelcase, Inc. (1988). The Office Environment Index: 1988 Detailed Findings. Grand Rapids, MI: Steelcase, Inc. Corporate Communications Department.

Strassmann, P. (1985). Information Payoff: The Transformation of Work in the Electronic Age. New York, NY: The Free Press.

U.S. Department of Labor, Office of the Secretary, Women's Bureau. (1985). Women and Office Automation: Issues for the Decade Ahead. Washington, D.C.: Government Printing Office.

_____. (1988). Flexible Workstyles: A Look at Contingent Labor. Washington, D.C.: Government Printing Office.

Weisbord, M. (1987). Productive Workplaces: Organizing and Managing for Dignity, Meaning and Community. San Francisco, CA: Jossey-Bass Publishers.

Zuboff, S. (1988). In the Age of the Smart Machine: The Future of Work and Power. New York, NY: Basic Books, Inc.